

A & G Residential
231 Fairway Drive
Fayetteville, NC 28305

01/16/2019

Attention : Jamie Godwin

RE: Daily Field Report for 01/16/2019
Lot 3 Hidden Lakes (CMT) Spring Lake, NC
Building & Earth Project No : RD190032

Ladies and Gentlemen:

On this date, representative(s) of Building & Earth were present to perform construction material testing services at this project site. Our testing and observations for this date include the following:

FO-1 : Field Observations made on this date.

- Foundation Inspection-Stem Wall Passed
- Project Management Review Passed

ST-1 : In place field density testing was performed for Finished Subgrade Soils -Building. The field density testing was performed in general accordance with ASTM D1556, using the results of field one-point as compared to the laboratory proctors. One(1) in-place field density test was performed on this date. The testing results indicate that in-place compaction and moisture content at the location and depth tested meet or exceed the specified requirements outlined in the project plans and specifications. For additional details of our testing, please refer to the attached Field Density Test Report.

Closing

The testing and observations identified above have been reviewed by our project manager. If you have questions regarding this information, please do not hesitate to contact us.

Respectfully Submitted,
Building & Earth Sciences, LLP

Enclosures : FO-1, ST-1



Rachael Heath

Reviewed By

Field Observations Report

Project Name: **Lot 3 Hidden Lakes (CMT) Spring Lake, NC** Project Number: **RD190032**
Client Name: **A & G Residential** Placement#: **FO-1**
Contractor: **A & G Residential** Technician: **Valente Arizpe**
Monitoring: **DCP**

1 : Foundation Inspection-Stem Wall

Passed

We arrived onsite to evaluate the building pad area for this residential lot. We understand the residence has been designed to be supported on a stem wall slab foundation. Upon arrival, the contractor had not finished excavating the footings. Our evaluation as documented in this report includes:

- 1) A visual description of the residential lot
- 2) Comments on any improvements that affect the foundations of the residence
- 3) Hand rod probing of the footing excavations
- 4) Performing Dynamic Cone Penetration (DCP) tests at representative locations
- 5) Soil Density tests on fill, if applicable.

Visual Description of the Lot:

The lot is relatively flat. Building locations are referenced from the street looking at the front of the residence. Maximum relief across the lot is approximately 3 feet. Surface water runoff appears to drain in to ditch in front of residence.

Comments on Improvements:

The site has been stripped of surface cover and topsoil. It appears that 2-3 inches of topsoil has been removed from the building pad area.

Structural fill has been placed at the site to level the building pad. Based on our observations, we understand the pad has been filled according to the following:

Section-----	Thickness of Cut or Fill
Left Front-----	24 inches of fill
Left Rear-----	24 inches of fill
Center-----	24 inches of fill
Right Front-----	24 inches of fill
Right Rear-----	24 inches of fill

Measurements:

- 1) How far is the nearest slope from the edge of the foundation? N/A

Future Footing Tests

Hand Rod Probing: Our representative performed hand rod probing of the surface of the building pad. Hand rod probing of the bearing material generally showed an average penetration of approximately 3-5 inches.

DCP Testing: Our representative performed Dynamic Cone Penetration (DCP) testing in general accordance with ASTM STP-399 at four representative locations to a depth of 36 inches. Our representative did not observe water within the DCP boreholes as noted below.

The following information provides the results of our hand auger borings and DCP testing:

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Monitoring: **DCP**

Test 1: [Rear Left Corner]

-- Depth---"N"-----Soil Color---USCS-----
--- FSG -- 6.5 --- Orange ----- SP/SM -----
--- -1' --- 6.5 --- Orange ----- SP/SM -----
--- -2' --- 7 --- Brown/Orange ----- SM -----
--- -3' --- 8.5 --- Orange/Brown ----- SM -----

Test 2: [Front Right Corner]

-- Depth---"N"-----Soil Color---USCS-----
--- FSG -- 6.5 --- Orange ----- SP/SM -----
--- -1' --- 7.5 --- Orange ----- SP/SM -----
--- -2' --- 9 --- Brown/Orange ----- SM -----
--- -3' --- 10 --- Orange/Brown ----- SM -----

Soil Density Testing:

Soil density testing was performed using the sand cone method of compaction in general accordance with ASTM D1556. The results of our tests are attached as ST-1.

Results:

Based on our observations and test results, the newly placed fill soils appear to be suitable to provide support for the floor slab and footings, provided the floor slab has a loading of less than 150 pounds per square foot, and the footings have a design bearing capacity of 2,000, or less.

Recommendations:

To minimize the potential for future softening of the bearing materials due to water infiltration, the surface soils should be protected from construction traffic and inclement weather. The construction of the footings and structure should commence without delay. In the event that the subgrade soils become wet, or otherwise compromised from their current condition, should be observed and retested as necessary by Building and Earth Sciences.

We note that our testing was isolated to the upper 3 feet of the soil profile from the finished subgrade elevation as observed on this date. As such, we cannot be aware of any soil or groundwater conditions below this depth that could adversely affect the support of the new construction. If additional information is required, please contact our office.

2 : Project Management Review

Passed

Our client has authorized Building & Earth Sciences to perform an evaluation of the prepared building pad for this project. The structure has a stem wall foundation, and the foundation walls have been backfilled to the slab grade using structural fill soils. It appears that approximately 2 feet of structural fill soils have been placed to achieve the slab grade. The intent of our testing was to determine if the newly placed structural fill soils have been compacted to 95% to support the floor slab and the interior lug footings.

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Monitoring: **DCP**

Our evaluation included hand rod probing the entire area for consistency, performing hand auger borings with DCPs, and performing in place density tests to confirm compaction. Based upon our hand rod probing, the surface soils are firm and resistant to penetration. At selected locations, hand auger borings were advanced at 2 locations within the backfilled area. At 12-inch increments in the hand auger boring, to a depth of 3 feet, Dynamic Cone Penetrometer (DCP) Testing was performed in accordance with ASTM STP-399. With proper evaluation, DCP Testing can be correlated to both bearing capacity and percent compaction. Based upon our testing, the soils below the surface have been compacted properly at the locations tested.


While on site, our representative also performed in place density testing to confirm compaction of the surface soils. Our testing was performed using the sand cone method in general accordance with ASTM D-1556. Our results were compared to an in-field proctor that was performed in general accordance with ASTM D-698.

Therefore based upon the results of our testing, the newly placed fill soils have been compacted adequately to provide support for the interior lug foundations and the floor slab. Additionally, inclement weather (rain or snow), as well as construction traffic across the pad, can compromise the stability and support characteristics of the surface soils. If the surface soils become compromised, it will be necessary to return to the site for re-testing. This decision should be executed by your onsite Quality Control and Superintendents.

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Contractor:	A & G Residential	Technician:	Valente Arizpe
Monitoring:	DCP		

Photographs

Picture ID	Dcp
10617	



ST-1

Test Date: 01/16/2019
 Field Technician: Valente Arizpe
 Tests requested by: N/R
 Results provided to: N/R

Report of Field Density Testing

Project Name: Lot 3 Hidden Lakes (CMT) Spring Lake, NC Ambient Temperature: 50-70
 Project Number: RD190032 Weather: Clear
 Project Location: Spring Lake, NC Wind Conditions: Calm
 Client: A & G Residential Results Provided To: N/R
 Contractor: A & G Residential Superintendent: N/R

- Notes: 1 Test location by technician
 2 Elevation by Technician
 3 Fill/backfill placed prior to technician arriving

Design & Specification Data

Area ID	Area Description	Depth (ft)	Test Method	% Compaction	Moisture Range	
					Min	Max
FSG-Bldg	Finished Subgrade Soils -Building	0.0 - 2.0	ASTM D-698	95 %	- 10.0	+ 10.0

Laboratory Proctors

Proctor ID	Description of Material	USCS/AASHTO	Maximum Dry Density (pcf)	Optimum Moisture Content (%)
1-point			108.5	9.0%

Density Test Data

Test #	IDs		Test Type	Location	Elev. (ft)	Dry Density(pcf)	% Moisture	% Compaction	Result
	Area	Proctor							
1	FSG-Bldg	1-point	ASTMD1556	Finished Subgrade Soils -Building : Center of Pad	FSG	105.1	13.2	97%	PASS

Equipment Used:
 Last Calibration:

Standard Counts: Density:
 Moisture:

Rachael Heath

Reviewed By



Geotechnical, Environmental, and Materials Engineers

ST-1

Test Date: 01/16/2019

Field Technician: Valente Arizpe

Tests requested by: N/R

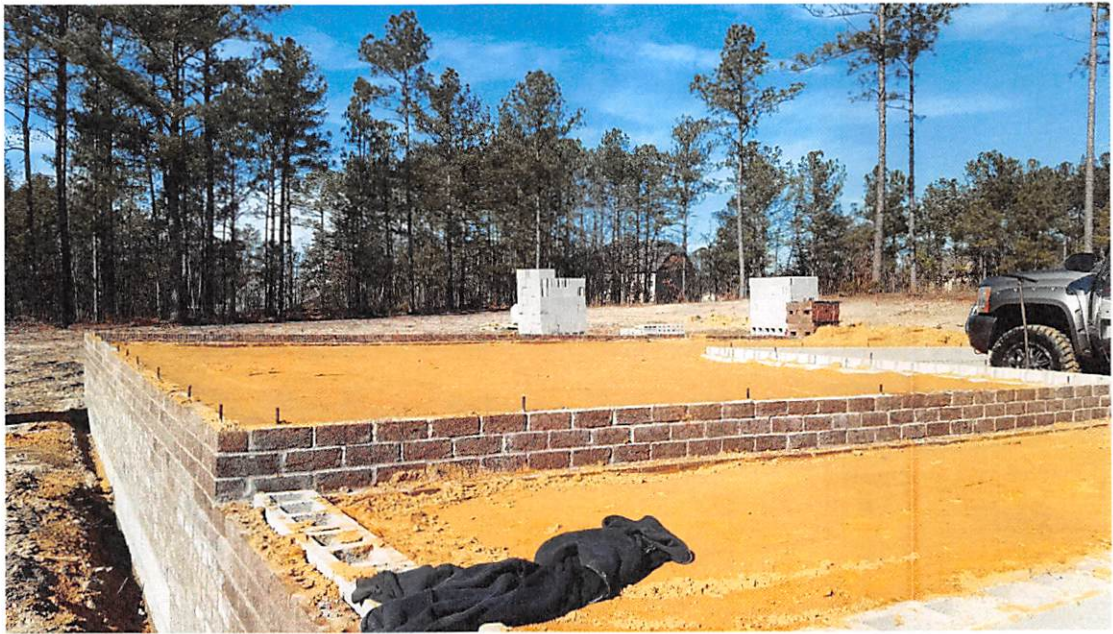
Results provided to: N/R

Photographs

Picture ID

Lot 3

10615



Rachael Heath

Reviewed By